



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Martin Starzmann
Serial No. : 09/463,598
Filed : January 27, 2000

REMARKS

In the Advisory Action mailed September 20, 2002, the Examiner has refused to admit applicant's Reply filed on September 3, 2002 and stated that the proposed amendments will not be entered because they raise the issue of new matter. The Examiner explains that "The new claim language is considered new matter, because the specification does not require the composition be glycol free. The applicants reference to the background's brief description of toxicity and the prior art is not enough a teaching that the present composition must be glycol free." Applicant respectfully traverses this finding. Applicant's nontraditional specification, which corresponds to the format used in Swedish patents, does provide support for applicant's amended claim that states its fluid be glycol free. Applicant describes prior art EP-B-0 306 972 as being "partially or completely glycol-free" on page 1, line 25 of applicant's specification. In the next paragraph, which begins on page 1, line 32 and concludes on page 2, line 4, applicant refers, on page 1, line 32, to "the above-mentioned fluid" which is the partially or completely glycol-free fluid on page 1, line 25. No other fluid is mentioned on page 1 between line 25 and line 32. In the following paragraph, which begins on page 2, line 6, applicant states that "The purpose of the present invention is to provide a corrosion protected heating/cooling *fluid of the above-mentioned type*" (emphasis added); this refers to the partially or completely glycol-free fluid of page 1, line 25. No other fluid is mentioned in the intervening text. Thus, a careful reading of the specification reveals that applicant discloses an invention whose fluid can be glycol free.

Moreover, the sentence beginning on page 2, line 9 of the PCT specification and ending on

page 2, line 12, reads as follows:

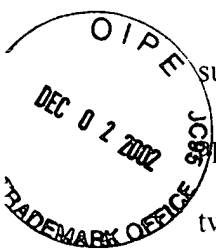
This has been achieved by means of the fluid containing a corrosion inhibitor in the form of a mixture of a C₅-C₁₆ monocarboxylic acid or alkali-, ammonium- or amino-salts of said acid, a C₅-C₁₆ dicarboxylic acid or alkali-, ammonium- or amino-salts of said acid, and also a triazole.

This sentence states the composition of the inventive fluid, which does not contain glycol, as would be expected by the reader of the application, since the inventor's goal was to create an environmentally safe corrosion exhibitor. The inventive fluid is an improvement over the prior art since the addition of salts and a triazole provides an excellent heat transfer between the metal surface and the fluid as explained on page 3 of the specification, lines 14-19. The omission of glycol from the inventive fluid was made clear in the sentence quoted above from page 2, lines 9-12. That sentence has been amended to emphasize that the fluid is free of glycol.

Applicant further adds claims 13 and 14 which further define the invention; support for these claims can be found beginning on line 27 of page 2 and continuing to page 3, line 2.

Applicant respectfully traverses the Examiner's rejection in the Office Action dated June 25, 2002 based on Miller et al., U.S. Patent No. 5,242,621. Miller et al. clearly discloses the use of a corrosion inhibitor in heat transfer fluid based on glycols. While Miller et al. does not require the antifreeze component to be a glycol, all of the "typical mixtures" he disclosed included glycols, and ethylene glycol is said to be preferred as the major antifreeze component (col. 3, lines 50-57.) No indication is given in Miller et al. about the specific combination claimed in the present invention. One skilled in the art would not interpret Miller et al. to be disclosing anything other than glycol antifreeze components, and no weight should be given to the language in that patent having no support, such as "and other freezing point depressants." (col. 3, lines 55-56).

The heating/cooling fluid according to the present invention is base on an organic salt solution and is much more friendly to the environment and less toxic than glycol. The commercial



success of the heating/cooling fluid according to the invention has been illustrated with brochures appended to applicant's Response to Office Action filed April 15, 2002 (mailed April 3, 2002). The two types of heating/cooling fluids, glycol as disclosed in Miller et al. on one hand and the organic salt solution on the other hand, are very different both from chemical and technical points of view. It is therefore not obvious to the person skilled in the art to expect that a corrosion inhibitor used together with glycol would function as a corrosion inhibitor in an organic salt solution. The very good results obtained with applicant's invention were therefore surprising, especially since it was very difficult to find an effective corrosion inhibitor suited for the strong ionic solution, constituted by the salt solution according to the invention. Many corrosion inhibitors are film forming, which for a heating/cooling fluid is undesired since it causes a reduced heat transfer between the heating/cooling fluid and a metal surface. Thus, applicant restates his belief that the present invention as disclosed and claimed cannot be regarded to be obvious over Miller et al. Applicant respectfully requests that this rejection of claims 1-12 as being unpatentable over Miller et al. be withdrawn.


No new matter has been added. Applicant respectfully requests that the Examiner allow the application. It is specifically requested that the amendment to claim 1 be entered, even if new claims 13 and 14 are not. If the Examiner has any questions, please do not hesitate to contact the undersigned.

Date:

November 25, 2002

DPH/KRV
Attached: Marked Up Specification and Claims
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Applicant : Martin Starzmann

Serial No. : 09/463,598

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Title : FROST RESISTANT HEATING/COOLING FLUID

Art Unit : 1751

Examiner : Derrick G. Hamlin

Attorney Docket: GP7287US (#90225)

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ATTACHMENT TO AMENDMENT

MARKED UP SPECIFICATION SHOWING CHANGES RELATIVE TO THE ORIGINAL VERSION

The purpose of the present invention is to provide a corrosion protected heating/cooling fluid of the above-mentioned type, which exhibits an effective heat transfer between metal surface and fluid, at the same time as the corrosion protection is excellent. This has been achieved by means of the fluid containing a corrosion inhibitor in the form of a mixture of a C₅-C₁₆ monocarboxylic acid or alkali-, ammonium- or amino-salts of said acid, a C₅-C₁₆ dicarboxylic acid or alkali-, ammonium- or amino-salts of said acid, and also a triazole. The foregoing fluid provided by the invention is free of glycol as are inventive compositions described below and included the examples.

MARKED UP CLAIMS SHOWING CHANGES RELATIVE TO THE ORIGINAL VERSION

1. (Thrice Amended) A frost resistant heating or cooling fluid containing alkali salts of acetic acid or formic acid, wherein the fluid is glycol free and further contains a corrosion inhibitor consisting of a mixture selected from the group of C₅-C₁₆ monocarboxylic acid; alkali-salt, ammonium-salt, and amino-salts of C₅-C₁₆ monocarboxylic acid; C₅-C₁₆ dicarboxylic acid, alkali-salt, ammonium-salt and amino-salts of C₅-C₁₆ dicarboxylic acid; and a triazole.